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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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*Ex parte* ALLEN P. CHEN,
JAYAKUMAR NATARAJAN,
and SIDDHARTH C. SHETH

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Appeal 2008-5665
Application 09/727,393
Technology Center 2600

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Decided:[1] February 19, 2009

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Before MAHSHID D. SAADAT, JOHN A. JEFFERY,
and CARLA M. KRIVAK, *Administrative Patent Judges*.

KRIVAK, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 1-11 and 13-42. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

## STATEMENT OF CASE

Appellants' claimed invention is a programmable intra-packet switching method. The method includes packet fragmentation that fragments a data cell until a user defined number of cells are generated or a data packet is fully fragmented (Spec. 5:10-12). A user interface allows a user to program the maximum number of cells and the defined size of the cells into which the packets are fragmented (Spec. 5:17-19). The method limits the number of cells that can be produced before another port is polled and, if available, another packet is processed, thereby reducing bottlenecks and increasing throughput (Spec. 6:12-14).

Independent claim 1, reproduced below, is representative of the subject matter on appeal.

1. A programmable intra-packet switching method comprising:

determining which, if any, of a plurality of data ports connected to a network, contains a data packet available for processing;

fragmenting a first portion of a first available data packet into at least one data cell having a defined size; wherein this fragmentation of the first data packet continues until a user-defined number of cells are generated;

storing, in a memory, at least one data element concerning the first available data packet, wherein:

the at least one data element includes a data element indicative of the incomplete fragmentation status of said first available data packet; and

the at least one data element enables fragmenting of a second portion of the first available data packet subsequent to fragmenting at least a portion of a second available data packet; and

subsequent to fragmenting the first portion of the first data packet and prior to fragmenting the second portion of the first available data packet, fragmenting at least a portion of the second available data packet on a different one of the plurality of data ports.

REFERENCES

| | | |
|---|---|---|
| Buchholz | US 5,440,545 | Aug. 8, 1995 |
| Muller | US 6,105,122 | Aug. 15, 2000 |
| Colmant | US 6,144,662 | Nov. 7, 2000 |
| Cam | US 6,671,758 B1 | Dec. 30, 2003 (filed Jun. 30, 2000) |
| Jha | US 6,847,644 B1 | Jan. 25, 2005 (filed Mar. 27, 2000) |

The Examiner rejected claims 1-4, 6, 7, 9-11, 13, 15, 16, 18, 19, 24, 26-33, and 35-42 under 35 U.S.C. § 103(a) based upon the teachings of Cam and Buchholz.

The Examiner rejected claims 5, 8, 14, and 17 under 35 U.S.C. § 103(a) based upon the teachings of Cam, Buchholz, and Colmant.

The Examiner rejected claims 20-23 and 34 under 35 U.S.C. § 103(a) based upon the teachings of Cam, Buchholz, and Jha.

The Examiner rejected claim 25 under 35 U.S.C. § 103(a) based upon the teachings of Cam, Buchholz, and Muller.

Appellants contend Buchholz fragments an entire packet and sends the fragmented packet in consecutive TDMA frames ( Buchholz col. 8, ll. 9-13; Br. 13). Further, Appellants contend, Cam, alone or in combination with Buchholz, fails to teach fragmenting a "second portion of the first available

data packet subsequent to fragmenting at least a portion of a second available data packet" (Br. 13).

## ISSUE

Have Appellants shown the Examiner erred in finding the reassembly header of Buchholz teaches enabling fragmenting of a second portion of a first available data packet subsequent to fragmenting at least a portion of a second available data packet such that combining Cam with Buchholz would result in Appellants' claimed invention?

## FINDINGS OF FACT

1. Appellants' invention includes a data element concerning first available data packet and indicative of incomplete fragmentation of the first available data packet and enabling fragmenting of a second portion of the first available data packet subsequent to fragmenting a portion of a second available data packet (cl. 1). The data element also enables, subsequent to fragmenting a first portion of the first data packet and prior to fragmenting the second portion of the first data packet, fragmenting a portion of the second data packet on a different data port (cl. 1).

2. Cam teaches packet data transfer for a FIFO interface (Abstract). For both transmit and receive interfaces, a maximum block size for packet fragments is fixed at start-up, either inherently in the device or by programming through an external interface (col. 3, ll. 6-10). A polled Physical Layer (PHY) Device indicates if it has sufficient space to accept data from a Layer device (col. 1, ll. 34-38; col. 2, ll. 62-66).

3. In Cam, only one PHY can be selected at a time. Further, a data transfer can be arbitrarily paused by the Physical Layer Device (col. 3, ll. 42-47).

4. Buchholz teaches a packet delivery system that uses an acknowledgement scheme to assure delivery of all fragments of a packet. When packet fragments are corrupted, etc., the acknowledgement scheme permits retransmission of the missing data (Abstract). A reassembly header is only found on transmission packets that carry a fragment including originating device message data. The reassembly header includes a source logical unit identification 610, a packet identification field 620, sequence number field 630, total fragment field 640, fragment number field 650, total packet length field 660, and a protocol field 670 (col. 6, l. 63-col. 7, l. l4; Fig. 6).

5. Buchholz fragments an entire packet and sends the fragmented packets 310 associated with the original data packet 300, in consecutive TDMA frames (col. 8, ll. 9-15).

## PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). "[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability." *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If the Examiner's burden is met, the burden

then shifts to the Appellants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *(Id.)*

"[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). "To facilitate review, this analysis should be made explicit." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007).

## ANALYSIS

The Examiner rejected claims 1-4, 6, 7, 9-11, 13, 15, 16, 18, 19, 24, 26-33, and 35-42 as obvious under 35 U.S.C. § 103(a) over Cam and Buchholz. Appellant argues this rejection with respect to representative claim 1 (Br. 11).

The Examiner states that Cam teaches all the features of claim 1 except for disclosing the fragmentation of the data packets as claimed (Ans. 5). The Examiner then finds Buchholz teaches these features and thus, it would have been obvious to one ordinarily skilled in the art at the time of the invention to "modify the method of Cam by processing packet fragments" and "storing a reassembly header for a first packet being processed" (Ans. 6). The Examiner concludes the reassembly header of Buchholz includes information regarding total packet length, how much of the packet has been fragmented, and how much needs to be fragmented so that "subsequent fragment processing of other packets and the remainder of the first packet can be performed, as taught by Buchholz" (Ans. 6-7). Thus, this would

allow determination of when a packet fragmentation of a large packet transmitted in multiple fragments has been completed and enable Cam to recognize the progress and status of packet fragmentation (Ans. 7).

Appellants argue Cam does not teach or suggest a data element that "enables fragmenting of a second portion" subsequent to fragmenting "a second available data packet" (Br. 12). Further, Appellants assert, Buchholz does not teach or suggest that the reassembly header provides information to "enable fragmenting of a second portion of a first available data packet subsequent to fragmenting at least a portion of a second available data packet" (Br. 12-13). Rather, Buchholz discloses a packet acknowledgement system that assures delivery of all fragments of a fragmented data packet (FF 4; Br. 12). Additionally, Buchholz fragments an entire packet and sends the fragmented packet in consecutive TDMA frames (FF 5; Br. 13). Thus, Appellants contend, Buchholz's reassembly header does not correspond to the data element in that it does not permit Buchholz to "fragment a second portion of the first available data packet subsequent to fragmenting at least a portion of a second available data packet" (Br. 13).

The Examiner's reliance on the reassembly header of Buchholz for providing information to "enable fragmenting of a second portion of a first available data packet subsequent to fragmenting at least a portion of a second available data packet" is unfounded. The Examiner infers that because Buchholz's reassembly header tracks the fragmented portion of a packet, the packet is processed using the Appellants claimed requirements. However, nothing in Buchholz teaches fragmenting a second portion of the first available data packet subsequent to fragmenting at least a portion of a second available data packet, as does Appellants claimed invention. The

mere presence of a header does not mean first and second data packets are fragmented as required by the claims (*see In re Kahn, supra*).

The Examiner states that Buchholz and Cam must be taken together (Ans. 18), and cites Figures 5, 6, and 11 of Cam. However, the Examiner has not explained where in Cam his assertions are found. The description given with respect to these figures does not support the Examiner's argument (*see KSR, supra*).

Thus, although Cam teaches a packet data transfer device and Buchholz teaches fragmenting data packets, neither of these references teaches or suggests first and second packet fragmentation as recited in claim 1. Accordingly, the Examiner has not provided a prima facie case of unpatentability with respect to claim 1, therefore the rejection of claim 1 and claims 2-4, 6, 7, 9-11, 13, 15, 16, 18, 19, 24, 26-33, and 35-42 as obvious over the combination of Cam and Buchholz is not sustained.

Claims 5, 8, 14, 17, 20, 25 and 34, were rejected over various combinations of Cam, Buchholz, Colmant, Jha, and Muller. Because these claims depend directly or indirectly from the above claims, and Colmant, Jha, and Muller do not remedy the deficiencies of Cam and Buchholz, the rejection of claims 5, 8, 14, 17, 20, 25 and 34 as obvious over the collective teaching of Cam, Buchholz, Colmant, Jha, and Muller is not sustained.

Claim 21 is an independent claim that was rejected over the combination of Cam, Buchholz, and Jha, and includes substantially the same limitations as claim 1. Thus, because Jha does not remedy the deficiencies of Cam and Buchholz, the rejection of claim 21, in addition to claims 22 and 23, which depend therefrom, as obvious over the collective teachings Cam, Buchholz, and Jha is not sustained.

## CONCLUSION

Appellants have shown the Examiner erred in rejecting claims 1-11 and 13-42 under 35 U.S.C. § 103(a).

## DECISION

The Examiner's decision in rejecting claims 1-11 and 13-42 is reversed.

REVERSED

KIS

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